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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,647	03/01/2004	Braj Bhushan Lohray	CHL-102(C)	9757

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PILLSBURY WINTHROP SHAW PITTMAN, LLP
P.O. BOX 10500
MCLEAN, VA 22102

EXAMINER	
SACKEY, EBENEZER O	
ART UNIT	PAPER NUMBER
1624	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/790,647	LOHRAY ET AL.	
	Examiner	Art Unit	
	EBENEZER SACKEY	1624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11,16,18,19 and 47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11,16,18,19 and 47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *03/01/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is in response to applicant's amendment filed on 01/31/07.

Status of the Claims

Claims 11, 16, 18-19 and 47 are pending.

Claims 1-10, 12-15, 17 and 20-46 have been cancelled.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Information Disclosure Statement

Receipt of the Information Disclosure Statement filed on 03/01/04 is acknowledged and has been entered into the file. A signed copy of the 1449 is attached herewith.

Response to Restriction

Applicant's election of Group X in the reply filed on 01/31/07 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 11, 16, 18 and 19 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for other forms, does not reasonably provide enablement for the use of derivatives, analogs, solvates or polymorphs of formula (I) broadly. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make diverse derivatives, analogs, tautomeric forms, solvates or polymorphs and to use same prophylactically commensurate in scope with these claims. The claims, insofar as they embrace polymorphs, solvates, derivatives, analogs or tautomeric forms are not enabled.

The evidence in the specification is clear: the disclosure does not provide evidence that the core compounds possess the properties needed to form derivatives, analogs, tautomeric forms, solvates or polymorphs and there is no evidence that such compounds have been used to prevent diseases caused by the use of claim 18.

The claims are drawn to solvates, derivatives, analogs, tautomeric forms and polymorphs. The examples presented in the specification all fail to produce any of the recited forms or teach how to administer such compounds. These asserted products couldn't be simply willed into existence. As stated in *Morton International Inc. v. Cardinal Chemical Co.*, 28 USPQ .2d 1190 "the specification purports to teach, with over fifty examples, the preparation of the claimed compounds with the required connectivity. However, ... there is no evidence that such compounds exist..... the examples of the '881' patent do not produce the postulated compounds.....there is ....no evidence that such compounds even exist." The same circumstance appears to be true here: there is no evidence that solvates or mixtures of these compositions actually exist; if they did, they would have been formed. Hence, applicants must now show that solvate or analogs or derivatives or tautomeric or polymorphic forms can be made and used in the methods claimed, or limit the claims to using those products for which there is full, clear and exact support.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 18 and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to

which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 18, recites a method of preventing diseases caused by impaired glucose intolerance, insulin resistance and diabetic complication. However, the specification only teaches the use of compounds of structural formula (I) for reducing the level of triglycerides, total cholesterol, LDL, VLDL and increased HDL and lowered serum glucose levels on pages 80-83. Therefore, the specification is not adequately enabled for the scope of prevention embraced by the claims.

For rejections under 35 U.S.C. 112, first paragraph, the following factors must be considered (In re Wands, 8 USPQ2d 1400, 1404 (CAFC, 1988)):

1) Nature of invention.

2) State of prior art.

3) Quantity of experimentation needed to make or use the invention based on the content of the disclosure

4) Level of predictability in the art.

5) Amount of direction and guidance provided by the inventor.

6) Existence of working examples.

7) Breadth of claims.

8) Level of ordinary skill in the art.

See below:

1) Nature of the invention.

The nature of the invention is the prevention of elevated cholesterol levels, low-density lipoproteins, triglycerides, Syndrome X, which is a cluster of factors for heart

disease associated with insulin resistance, hypertriglyceridemia (high blood lipid), diabetes complications, impaired glucose intolerance which is considered to be a stage in the development of type 2-diabetes and a risk factor for cardiovascular disease by employing the use of compounds of structural formula (I). As stated however, the claims are not enabled for the prevention of any of the cited diseases. Although there are some lifestyle modifications, which may have a profound impact upon diseases and complications associated with impaired glucose intolerance, to date, there are no known chemotherapeutic preventive agents recognized in the art for the conditions caused by impaired glucose tolerance such as diabetes, hypertension, strokes, and cardiovascular diseases or diabetic complications or insulin tolerance.

2) State of the prior art and the predictability or lack thereof in the art.

The state of the prior art involves screening *in vitro* and *in vivo* system to determine which compounds exhibited the desired pharmacological activities (i.e. what compounds can treat which specific disease). There is no absolute predictability even in view of the seemingly high level of skill in the art. The existence of these obstacles establishes that the contemporary knowledge in the art would prevent one of ordinary skill in the art from accepting any prophylactic regimen on its face.

The instantly claimed invention is highly unpredictable as discussed below:

It is noted that the pharmaceutical art is unpredictable, requiring each embodiment to be individually assessed for physiological activity. *In re Fisher,* 427 F.2d 833, 166 USPQ 18 (CCPA 1970) indicates that the more unpredictable an area is, the more specific enablement is necessary in order to satisfy the statue.

It is the state of the art that there is no known preventive medication for the recited diseases. The specification provides no other guidance as to what diseases are

being prevented by the instant compounds. The notion that a beta-aryl-alpha-substituted propanioc acid of formula (I), have such a range of uses is not seen to be supported in the art at the time of applicants' effective filing or even in the present. While beta-aryl-alpha-substituted propanioc acid of formula (I) are known for treating obesity, diabetes and hyperglycemia, there is no evidence of record that there is a correlation of success for preventing or treating diseases caused by the administration of compounds of structural formula (I). The long list of alleged preventable diseases constitutes "an invitation to experiment" which is not in compliance with 35 USC 112.

3) Quantity of experimentation needed to make or use the invention based on the content of the disclosure.

The quantity of experimentation needed is undue experimentation. One of ordinary skill in the art would need to determine which of the compounds of claim 11 would posses the activity necessary to prevent diseases associated with or caused by impaired glucose intolerance such as diabetes, hypertension, strokes, arteriosclerosis and cardiovascular diseases; insulin resistance diseases such as obesity and Syndrome X; or diabetic complications such as nerve damage, weight gain, blindness, blurred vision, slow healing and death.

4) Level of predictability in the art.

The art pertaining to the prevention and/or treatment remains highly unpredictable. As disclosed above, there is no absolute predictability even in view of the seemingly high level of skill in the art. Many of the symptoms of the diseases may be treated, however, applicant has failed to provide sufficient evidence or to point out preventive measures recognized in the art at the time the invention was made.

5) Amount of direction and guidance provided by the inventor.

The amount of direction or guidance present is found on pages 80-83 of the

specification where hPPARα activity is provided. However, there is no clinical data or scientific data in the specification to controvert the findings in the art from which one can reasonably conclude that all of applicants' compounds possess all the preventive uses claimed herein. Where the assertion of utility is unusual, difficult to treat or speculative, the Examiner has the authority to require evidence that tests relied on are reasonably predictive of *in vivo* efficacy by those skilled in the art. See for example *In re Ruskin*, 148 USPQ, *EX parte Jovanovics*, 211 USPQ 907. Also note MPEP .2164.05(a).

6) Existence of working examples.

As discussed above, working example is found on pages 80-83 of the specification where hPPARα activity is provided. Applicant's limited working example does not enable one of ordinary skill in the art to treat or prevent the numerous amounts of diseases encompassed by the instant invention. At best, the treatment currently asserted for the instant invention is the reduction of plasma glucose, triglycerides, cholesterol, LDL, VLDL and elevating HDL cholesterol levels and type 2-diabetes and not the prevention of any of these diseases.

7) Breadth of claims.

Additionally, claim 18 is extremely broad due to the vast number of possible diseases encompassed by the instant claim language.

8) Level of ordinary skill in the art.

The level of ordinary skill in the art is high. Due to the unpredictability in the pharmaceutical art, it is noted that each embodiment of the invention is required to be individually assessed for physiological activity by *in vitro* and *in vivo* screening to determine which compounds exhibit the desired pharmacological activity and which diseases would benefit from this activity.

Hence, the specification fails to provide sufficient support of the broad use of the

compounds of claim 11 for the prevention and/or treatment of any disease. As a result necessitating one of ordinary skill in the art to perform an exhaustive search for which disease can be treated or prevented by compounds of claim 11 in order to practice the claimed invention.

Genentec Inc. V. *Novo Nordisk A/S* (CAFC) 42 USPQ 2D 1001, states that:

"a patent is not a hunting license. It is not a reward for search, but compensation for its successful conclusion" and "[p]atent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or may not be workable".

Therefore, in view of the Wands factors, and *In re Fisher* (CCPA 1970) discussed above, to practice the claimed invention herein, a person of ordinary skill in the art would have to engage in undue experimentation to test which diseases of claim 17 can be treated or prevented by the compounds encompassed in instant claim 1 with no assurance of success.

This rejection can be overcome by deleting preventing from the claim language.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 47 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 47 improperly depends from a method claim. The claim is distinct and independent from that of claim 11 because each claim is directed to a different statutory

class of invention and, the practice of one claim would not result in the practice of the other claim. Accordingly, all the substituents on structural formula (I) must be defined in claim 47.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 18-19 and 47 are rejected on the grounds of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8 and 13 of U.S. Patent number 6,987,123. Although the conflicting claims are not identical, they are not patentably distinct from each other because there are considerable overlap of subject matter between the instant claims and the patent claims. The prior art differs from instant compounds in that the prior art generic description of the compounds etc. Note the definition of W, XR^7, Y, ZR^8, Ar and R^1-R^6, which embraces the prior art.

It would have been prima facie obvious to one of ordinary skill in the art at the time of filing the instant application to prepare additional compounds from under the genus of

'123', especially where '123' prefers certain embodiments such as where W is O or Ar represents a substituted aromatic ring with the expectation that said compounds would have the same or similar activity. See In re Baird, 146 USPQ 579 (CCPA 1965).

One of ordinary skill in the art would have found the claimed compounds prima facie obvious, since the reference compounds generically embrace them. The requisite motivation for arriving at the claimed compounds stems from the fact that they fall within the generic class of compounds disclosed by the reference. Accordingly, one of ordinary skill would have been motivated to prepare any of the compounds embraced by the disclosed generic formula, including those encompassed by the claims, with the expectation that each of them would be suitable as agents for reducing plasma glucose LDL, VLDL etc.

Note that the disclosed compounds have activity as agents for pharmaceutical use, thus the skilled artisan would expect such structurally similar compounds to posses similar properties. Additionally, the Court stated in In re Payne et al., 606 F.2d 302, 203 USPQ at 255 (CCPA 1979):

"the name used to designate the relationship between related compounds is not necessarily controlling; it is the closeness of that relationship which is indicative of the obviousness or unobviousness of the new compound."

Furthermore, any question of why would one conceive and use the similar compounds (i.e., motivation) is answered by the Court in In re Gyurik et al., 596 F.2d 1012, 201 USPQ 552 at 557:

"In obviousness rejections based in close similarity in chemical structure, the necessary motivation to make a claimed compound, and thus the prima facie case of obviousness, rises from the expectation that compounds similar in structure will have similar properties" in pharmaceutical industry.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to E. Sackey whose telephone number is (571) 272-0704. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson, can be reached on (571) 272-0661. The fax phone number for this Group is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1600.

EOS
February 20, 2007

James O. Wilson
Supervisory Patent Examiner
Art Unit 1624, Group 1600
Technology Center 1